

Claims

1. A sensor comprising a signal source (3) to emit a physical signal and a signal detector (4) at a distance from the signal source (3), to receive the physical signal at the location of the signal detector, and an evaluation unit (5), which is connected to the signal detector (4) and which evaluates the received physical signal and which from this determines the relative distance between the signal source (3) and the signal detector (4), such that the signal source (3) and the signal detector (4) are situated on a common substrate body (1) or on two mutually separated substrate bodies (1, 2).
2. The sensor of Claim 1, characterized in that the evaluation is performed in terms of stored information regarding the transmission source (3).
3. The sensor of Claim 1 or 2, characterized in that the spatial distance between the signal source (3) and the signal detector (4) is constant, and the spatial region (6) between these can undergo a change of its transmission property.
4. The sensor of Claim 1 or 2, characterized in that the spatial distance between the signal source (3) and the signal detector (4) is variable, and the spatial region (6) between these does not undergo a change of its transmission properties.
5. The sensor of Claim 3, characterized in that the evaluation unit (5) is designed in such a way that the gas density or transport rate or throughflow quantity can be determined from the relative distance.

6. The sensor of Claim 4, characterized in that the evaluation unit is designed so that the acceleration, pressure, or force on the sensor can be determined from the relative distance.
7. The sensor of one of the preceding claims, characterized in that the control unit (7) is connected to the signal source (3) and controls it, and that the evaluation unit (5) is connected to the control unit (7) in such a way that, by means of the control data received from the control unit (7), the information regarding the signal source (3) can be updated.
8. The sensor of one of the preceding claims, characterized in that the control unit (7) is connected to one or more of the following units: signal source (3), the signal detector (4), and the evaluation unit (5), in such a way that these can be turned off and turned on in a specific way by the control unit (7).
9. The sensor of one of the preceding claims, characterized in that the evaluation unit (5) and/or the control unit (7) is integrated into at least one of the substrate bodies (1, 2).
10. The sensor of Claim 9, characterized in that the evaluation unit (9) is situated in the substrate body (2) below the signal detector (4).
11. The sensor of Claim 9 or 10, characterized in that the evaluation unit (5) is integrated into the second substrate body (2) and the control unit (7) is integrated into the first substrate body (1).
12. The sensor of one of the preceding Claims 9 to 11, characterized in that the evaluation unit (5) and/or the control unit (7) have elements which amplify the signal.

13. The sensor of Claim 4, characterized in that the first substrate body (1), in which the signal source (3) is situated, and/or a region of the second substrate body (2), in which the signal detector (4) is situated, is designed as a diaphragm.
14. The sensor of Claim 13, characterized in that a damping device to damp the diaphragm is present.
15. The sensor of one of the preceding claims, characterized in that the signal source (3) and/or the signal detector (4) has a spatial structure apt to measure spatial resolution.
16. The sensor of Claim 15, characterized in that it has an electronic apparatus to process the spatially resolved measurement.
17. The sensor of one of the preceding claims, characterized in that a part of the conductor tracks situated in the respective substrate is used to form the signal source (3) and/or to form the signal detector (4).